What is claimed is:

1. A linear motor coil assembly for developing linear motion, comprising:

a plurality of coils arranged in a line in a direction of movement, each coil having an associated coil shaft, said coil shafts being perpendicular to the direction of motion; and

a flat cooling tube, said cooling tube having a cross section elongated in a direction parallel to the coil shafts and folds into which said coils are adapted to engage, said cooling tube meandering inside the plurality of coils.

2. The linear motor coil assembly according to claim 1, wherein the flat cooling tube has a plurality of clearance holes for passing coolant, said clearance holes being formed in a direction parallel to the coil shafts.

3. The linear motor coil assembly according to claim 1, wherein the flat cooling tube comprises a plurality of round pipes for passing coolant, said pipes being aligned and attached in a direction parallel to the coil shafts.

4. The linear motor coil assembly according to claim 1, wherein the flat cooling tube has interleaved folds at least equal in number to the number of coils.

5. The linear motor coil assembly according to claim 1, wherein the elongated cross section of the flat cooling tube is the same as, or slightly larger than, the length of the coils in an axial direction.

6. The linear motor coil assembly according to claim 1, further comprising cores, divided for each coil, around which the coils are wound.

7. The linear motor coil assembly according to claim 6, further comprising a base plate, the cores being fixed to the base plate in a line generally parallel to the direction of motion.

8. A method of manufacturing a linear motor assembly for developing linear motion, comprising the steps of:

providing a plurality of cores divided for each magnetic pole;

winding coils around the respective cores;

providing a flat cooling tube having interleaved folds, the number of folds being at least equal to the number of coils, said folds being changeable by the coils;

fitting the core into the folds; and

arranging the cores in a line.